

### Remarks in Support of Patentability

The examiner rejected claims 1 through 7 under 35 USC 103 on the basis of Shubha, et al., remarking that the recitation appearing in the claim preamble of “A Method for Categorizing Voice Samples of a Person Being Tested for Near-Term Suicidal Risk is a Prelude for Such Testing” was given no patentable weight because the recitation occurred in the preamble. The examiner went on to comment that the preamble is generally not accorded patentable weight where it merely recites purpose of a process of the intended use of the structure and in support of that cited in re *Application of Mamoru Hirao et.al.* 535 F.2d 67 (CCPA 1976) and *Kropa v. Robie et.al.* 187 F.2d 150 (CCPA 1951).

Applicants respectfully note that neither of the cases cited by the examiner support the examiner’s position. In fact, *Kropa v. Robie* runs contrary to the examiner’s position. On the facts of that case, the CCPA held that the preamble of a claim was a limitation which was material and had to be observed.<sup>1</sup>

Applicants have amended claims 1 and 7 to address the examiner’s contention by including the limitation of “identifying said segments classified as voice as being suitable to testing of the person for near-term suicidal risk” as a new element “K” of claim 1 and a new element “F” of claim 7.

Further respecting the rejection of claims 1 and 7, applicants respectfully note that the Shubha reference cited by the examiner has nothing at all to do with categorizing voice samples of a person being tested for near-term suicidal risk. The Shubha reference relates to application of the wavelet transform, a mathematical technique, for performing pitch detection in speech signals. Pitch detection is something quite different from the method defined by claim 1 and is

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<sup>1</sup> *Kropa v. Robie* involved an interference. The issue was whether the phrase “an abrasive article” appearing in a claim preamble was a limitation to be given weight in interpreting the claim.

something quite different from the function of the apparatus defined by claim 7. Applicants readily admit that detecting pitch is an important parameter for some processes, but pitch detection alone is far, far removed from applicants' invention of the detecting near-term suicidal risk through analysis of vocal signals. Accordingly, reconsideration and withdrawal of the 35 USC 103 rejection of claims 1 and 7 on the basis of Shubha is respectfully requested.

Concerning the rejection of claims 2, 3, 6 and 8 made under 35 USC 103 on the basis of Shubha, et al. in view of Parson, applicants have amended claims 2 and 6 to include language analogous to that appearing in the claim preambles, namely a "method for determining jitter variations and fundamental frequency of the voice of a person being evaluated for near-term suicidal risk" in claims 2 and 6, as element "G" in claim 2 and as element "C" of claim 6. Additionally, this language has been added as element "P" of claim 3 and as element "I" in claim 8.

With these amendments to the claims applicants respectfully note that patentable weight should be given to the recitation of the utility of the method since the utility of the method is now recited as a claim limitation.

In this regard, the examiner had cited again in re *Application of Mamoru Hirao et.al.* and *Kropa v. Robie et.al.*, addressed above. Applicants again note that the case law cited by the examiner does not support the examiner's contention regarding the weight, or lack thereof, to be accorded limitations appearing in claim preambles.

In critiquing element A of claim 2, the examiner asserts that it would be obvious that one of ordinary skill in the art of the time the invention was made to modify Shubha, et al. to use a sample set length of 512. In support of this the examiner asserts that the applicants have not disclosed whether any specific set length provides an advantage, is used for a particular purpose

or solves a stated problem. Applicants have provided a way of detecting suicidal predisposition in persons by vocal analysis and have disclosed and claimed the means for doing so. It is unsupported speculation on the part of the examiner to assert that one of skill in the art would have some motivation to modify Shubna, et al. to use the sample set length claimed by the applicants and achieve a method of detecting suicidal predisposition.

With regards to steps E and F of claim 2, the examiner asserts that Shubna discloses computing fundamental frequency as the inverse at the time of intervals between local peaks and that the method of finding peaks using harmonic-peaked-based detection is allegedly well-known in the art.

Shubna, et al. has to do with finding pitch of a speaker and does not even begin to address the problem of detecting suicidal predisposition in humans by using voice analysis. Parsons is concerned with speech processing and discloses various mathematical techniques used for the same. Parsons makes no mention of the need for detecting suicidal predisposition through vocal analysis, let alone providing any solution to the problem that has been addressed successfully by applicants. Reconsideration and withdrawal of the rejection of claims 2, 3, 6 and 8 on the basis of Shubna in view of Parsons is respectfully solicited.

Respecting the rejection of claims 4 and 5 under 35 USC 103 on the basis of France, the examiner asserts that element "C" of claim 4, reciting "if there are two consecutive voiced segments, measuring fundamental frequency for each of said two segments" is disclosed by France were France allegedly discloses "measuring  $F_0$  for each segment (page 833, first and second paragraphs)". Applicants respectfully submits these two paragraphs of France do not disclose element "C" of applicants' claim 4, as contended by the examiner.

In the paragraph bridging pages 832 and 833 France discloses initially using a cepstral analysis algorithm employing a cepstral peak thresholding procedure to determine whether a frame of speech is voiced or unvoiced. Only after this thresholding procedure is performed that the six statistics of fundamental frequency are processed and determined, according to the first two paragraphs on page 833 of France. Since France only determines whether a frame of speech is “voiced or unvoiced”, this is not the same as dividing a signal into segments according to whether the person was “silent, speaking voice words or making unintelligible unvoiced sounds” as recited in applicants’ element “B” of claim 4. Hence, the France process as cited by the examiner is different from that defined by independent claim 4.

Applicants respectfully submit that the examiner’s analysis of the disclosure of France is flawed since France works initially to determine whether a frame of speech is either voiced or unvoiced. France does not involve time wise dividing a signal into segments according to whether the person was silent, was speaking voiced words or was making unintelligible unvoiced sounds, as recited in applicants’ element “B” of claim 4. Hence, France involves a determination of whether a frame of speech is voiced or unvoiced i.e. an either/or proposition.

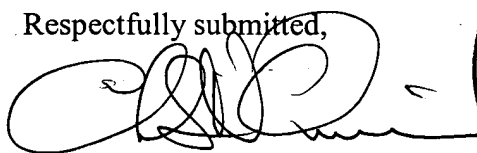
Contrasting, applicants’ claim 4 involves timewise dividing a signal into segments according to whether the person was silent or was speaking voice words or was making unintelligible unvoiced sounds. Hence, applicants, in element “B” of claim 4, seek to divide the signal into segments according to which one of three characteristics the signal displays, whereas France is only concerned with two characteristics of the signal and dividing the signal accordingly. Applicants respectfully submitted it cannot be contended that France discloses claim 4 and 5 as asserted by the examiner on page 9 of the official action.

Further respecting the rejection of the claims on the basis of France, on page 10 of the official action the examiner states "here, the 22<sup>nd</sup> segment would undoubtedly contain several (two or three) voiced segments, since F<sub>0</sub> can only be measured for voice segments and twenty seconds is too long a duration for single voiced segments (short of a long scream, but certainly not common in speech recorded during a therapy session.). The examiner has ignored the possibility of the subject "making unintelligible unvoiced sounds", which can certainly occur for twenty seconds or more. Moreover, there is nothing in applicants' claims requiring that the speech of interest be "recorded during a therapy session". Applicants' invention is broadly applicable. Applicants' invention has applicability far beyond therapy sessions. It is error on the part of the examiner to speculate otherwise.

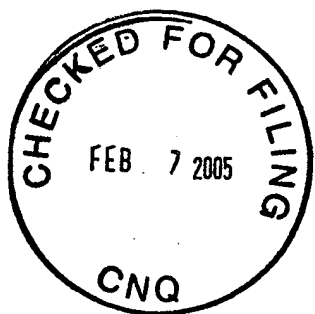
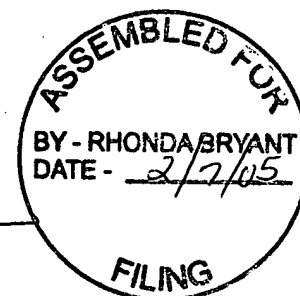
For all of the foregoing reasons, applicants respectfully submit that the claims in their current form are patentably distinguishable over the references cited by the examiner. Notification of the same and issuance of a notice of allowance is respectfully solicited.

To the extent there is any fee required in connection with the receipt, acceptance and/or consideration of this paper and/or any accompanying papers submitted herewith, please charge all such fees to deposit account 50-1943.

Respectfully submitted,

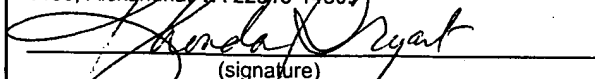


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